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(58) Field of search

A6R

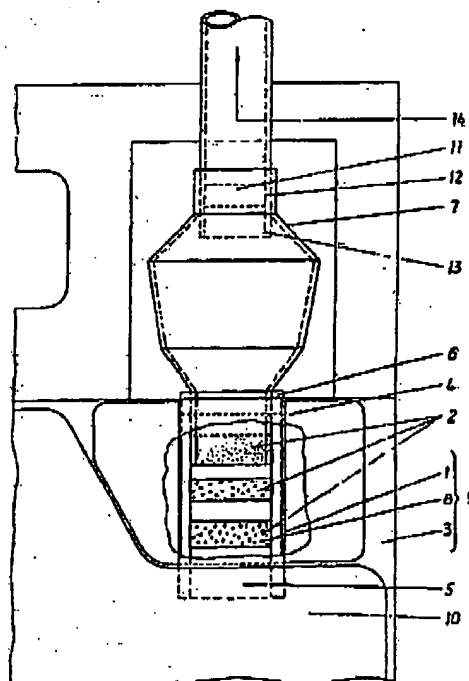
Selected US specifications from IPC sub-class

A61F

(54) Collecting bag for body fluids

(57) A collecting bag 3 for urine and secretions has a barrier acting as a microbe or bacteria barrier in the form of stable or self-stabilising surface films 1,2 which are disposed at the inlet and which, during adsorption, are renewed by migratory substances from the carrier material. The films are provided on an inlet 4 of the bag, on a flexible tube 5 in the inlet, and/or on a hollow intermediate member 7 connecting tube 5 to a further flexible tube 13 and a one-way valve (not shown).

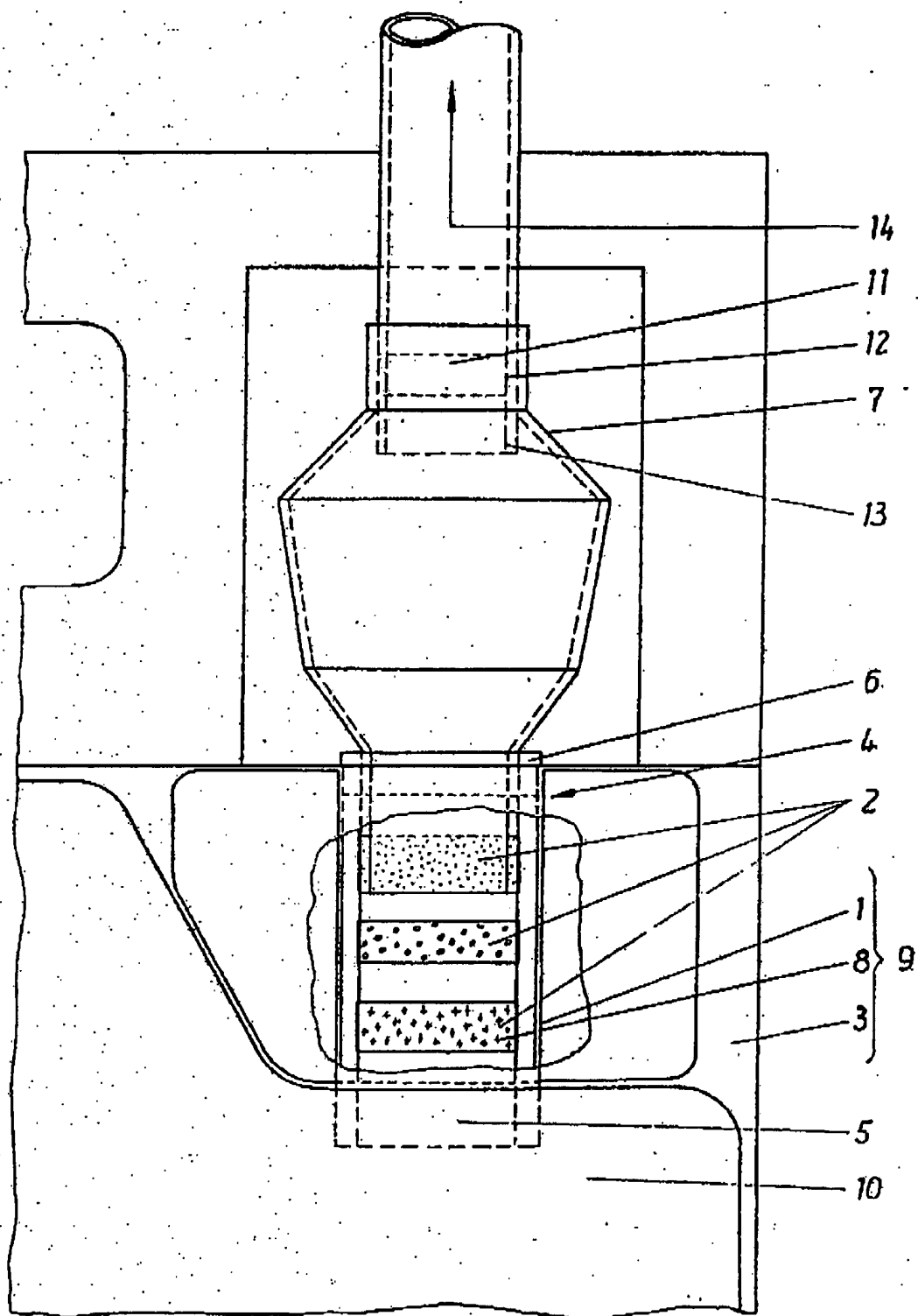
A reaction forming a coloured substance is achieved by means of reversibly oxidizable-reducible dyestuffs.



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Collecting bag for body fluids

The invention relates to a collecting bag for urine and secretions, having a barrier acting as a microbe or bacteria barrier. With such collecting bags, it is desirable on the one hand for the risk of infection is to be avoided and on the other hand for the growth of bacteria to be made visible or for individual components of urine and secretions to be determined.

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A device acting as a microbe or bacteria barrier is known which is disposed at the inlet side on the one-way valve of a flexible-tube system (DE-OS 29 27 376). It comprises essentially a sponge which is impregnated with an antiseptic substance and is in the form of an annular barrier.

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In another known solution, the one-way valve is preceded by an intermediate member into a cavity of which an antiseptic substance is introduced (DE-OS 34 17 071). Both arrangements are intended to inhibit the development of or to destroy bacteria but a danger of infection is not adequately indicated, although its definite identification is absolutely essential for a diagnosis.

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The present invention seeks to avoid the disadvantages of the known microbe or bacteria barriers. It also seeks to meet the special requirements for a quantitative analysis while simultaneously totally preventing any bacteria from reaching the outside of the collecting bag. At the same time, it seeks to provide an arrangement directed against strain of bacteria which, according to the Lancefield classification system, belong to the group of pathogenic bacteria.

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The invention further seeks to provide a bacterial indicator which achieves a reliable destruction of bacteria, particularly those of the inevitably pathogenic and possible pathogenic types of bacteria.

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According to the invention there is provided a collecting bag for body fluids, having a barrier acting as a microbe or bacteria barrier, the barrier being supported on a carrier at or adjacent an inlet of the bag and being in the form of one or more antibacterial or bacteriostatic and/or bactericidal coverings which are constructed in the form of stable or continuously self-stabilising surface films and, during adsorption, are renewed by migratory substances from the carrier.

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In arrangements according to the present invention, antibacterial coatings with different antibiotics are deposited in order to differentiate between the bacteria causing the most important streptococci illnesses. The result of the determination of the responsiveness of micro-organisms with regard to chemical therapeutic and antibiotics is visibly indicated in a colour comparison chart known as an antibiogram.

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A preferred embodiment of the present invention will now be described, by way of example only with references to the accompanying drawing which shows the inlet of a collecting bag, part of which is illustrated sectionally.

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Before going in more detail into the preferred embodiment with substances which, even when greatly diluted have an antibacterial effect which lead to the inhibition of the development or to the destruction of bacteria, some remarks about the streptobacillus will

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be necessary.

As has already been disclosed fully in DE-OS 35 05 311, of the Streptococci widely distributed in nature, only a few strains are pathogenic to human beings and/or animals whereas others do not have any disease-producing properties and occur as saprophytes. The Streptococci are classified in zero-groups of which the Streptococci of Group A nearly always cause infections in humans. Therefore the Streptococci responsible as pathogenic agents, for example of wound infections, inflammations etc, and the pathogenic agents feared because of their sequels, for example rheumatic fever, scarlet fever etc. must be identified so that a treatment can be effected appropriate to the diagnosed disease.

A colour-forming reaction is preferably achieved by means of one or more reversibly oxidisable-reducible dyestuffs.

The collecting bag 3 shown in the Figure has an integral inlet 4 which receives a flexible tube 5 having an inset portion 6. Portion 6 receives an intermediate member 7 which connects bag 3 to a flexible tube 13 and a tube system indicated by arrow 14. The identification of the presence of the Streptococci and the inhibition of their development or their destruction is achieved by an antibacterial covering 1 or a plurality of coverings 2 having a bacteriostatic and/or bactericidal effect, which are constructed in the form of stable or continuously self-stabilising surface films and which, during adsorption are renewed by migratory substances from the carrier material. The carrier for the coverings 1,2 is formed by the inlet 4, and/or the portion 6, and/or the

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intermediate member 7.

The coverings 1,2 are impregnated with reagents 8.  
They can be used connected in series as antibiograms 9.

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Infections are caused mainly by  $\beta$ -haemolyzing  
Streptococci of the pyogenic Group A. It is therefore  
advisable not only to shut off the path from the  
interior 10 of the collecting bag outwards into the  
open air but also to provide the inlet to the  
collecting bag 3 with a covering 11 having a  
bactericidal effect. This covering 11 is preferably  
provided as a surface film all around on the inner wall  
12 of the flexible tube 13, in front of the one-way  
valve (not shown) in the inflow direction.

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Claims

1. A collecting bag for body fluids, having a barrier acting as a microbe or bacteria barrier, the barrier being supported on a carrier at or adjacent an inlet of the bag and being in the form of one or more antibacterial or bacteriostatic and/or bactericidal coverings which are constructed in the form of stable or continuously self-stabilising surface films and, during adsorption, are renewed by migratory substances from the carrier.
2. A bag according to Claim 1, wherein the bag has an inlet portion on which the covering(s) are provided.
3. A bag according to Claim 1 or 2, wherein the inlet passage to the bag includes a flexible tube, on a portion of which the covering(s) are provided, said portion being at the end of the tube further from the interior of the bag.
4. A bag according to any preceding Claim, wherein an intermediate member is provided for connecting the bag to a tube system, the covering(s) being provided on the intermediate member.
5. A bag according to any preceding Claim incorporating one or more reversibly oxidisable-reducible dyestuffs which are capable of reacting to produce a coloured substance.
6. A collecting bag for body fluids substantially as herein described with reference to the accompanying drawing.